



{ 1160 } PHARMACEUTICAL CALCULATIONS IN PRESCRIPTION COMPOUNDING

INTRODUCTION

The purpose of this chapter is to provide general information to guide and assist pharmacists in performing the necessary calculations when preparing or compounding any pharmaceutical article (see Pharmaceutical Compounding—Nonsterile Preparations { 795 }, Pharmaceutical Compounding—Sterile Preparations { 797 }, and Good Compounding Practices { 1075 }) or when simply dispensing prescriptions (see Stability Considerations in Dispensing Practice { 1191 }).

Correct pharmaceutical calculations can be accomplished by using, for example, proper conversions from one measurement system to another and properly placed decimal points, by understanding the arithmetical concepts, and by paying close attention to the details of the calculations. Before proceeding with any calculation, pharmacists should do the following: (a) read the entire formula or prescription carefully; (b) determine which materials are needed; and then (c) select the appropriate methods of preparation and the appropriate calculation.

There are often several ways to solve a given problem. Logical methods that require as few steps as possible should be selected in order to ensure that calculations are done correctly. The best approach is the one that yields results that are accurate and free of error. The pharmacist must double-check each calculation before proceeding with the preparation of the article or prescription order. One way of double-checking is by estimation. This involves rounding off the quantities involved in the calculation, and comparing the estimated result with the calculated value.

Finally, the following steps should be taken: the dosage of each active ingredient in the prescription should be checked; all calculations should be doubly checked, preferably by another pharmacist; and where instruments are used in compounding, they should be carefully checked to ascertain that they will function properly. See USP general chapters Aerosols, Nasal Sprays, Metered-Dose Inhalers, and Dry Powder Inhalers { 601 } ,